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ABSTRACT

To evaluate whether changes in theory and research on the basic processes in reading comprehension have led to changes in classroom practice, a study conducted a modified replication of a 1967 study by F. J. Guszak. In the 1967 study, Guszak recorded and analyzed reading group story discussions for students and teachers in grades 2, 4, and 6, revealing an overall emphasis at all grades on literal level questions, with a few more evaluation level questions than either conjecture or explanation questions. Fifteen teachers and their classrooms participated in the current study. All class discussions were videotaped and transcribed for analysis. Using similar analysis schemes, this study reported a sharp reduction in literal level questions, with a large increase in the explanation category, but with the percentage of evaluation and conjecture questions comparable to the original study. While significant changes were found in the type of questions governing discussions, almost no change was found in the patterns of interactions, such as the frequent repetition of IREs (teacher initiates an interaction, student responds, and teacher evaluates). Observations indicate that teachers still dominate discussions and control interactions, but rely more on questions that invoke students' knowledge and less on text-based questions. (Five tables of data are included and 41 references are attached. Appendixes describe and report interaction categories and provide inter-rater agreements.) (MM)

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Technical Report No. 461

TEACHER QUESTIONING AND FEEDBACK PRACTICES AFTER THE COGNITIVE REVOLUTION: REPLICATION AND EXTENSION OF GUSZAK'S (1967) STUDY

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Abstract

In the last 20 years we have witnessed a revolution in the way we think about basic processes in reading comprehension. What is still not certain is the degree to which these changes in theory and research have led to changes in classroom practice. To evaluate whether such an impact has occurred, we conducted a modified replication of a study conducted by Guszak in 1967. Guszak recorded and analyzed reading group story discussions for students and teachers in grades 2, 4, and 6. He noted an overall emphasis at all grades on literal level questions (70.4%), with a few more evaluation level questions (15.3%) than either conjecture (6.5%) or explanation (7.2%) questions. Using very similar analysis schemes, we found, 20 years later, a sharp reduction in literal level questions (42.8%), with a big increase in the explanation (28.5%) category and comparable figures for evaluation (18.4%) and conjecture (3.8%) questions. While big changes were found in the type of questions governing discussions, almost no change was found in the patterns of interactions, with the classic repetition of one IRE (teacher initiates an interaction, student responds, and teacher evaluates) after another after another. Teachers, in short, still dominate discussions and control the floor; they simply do it with greater reliance on questions that invoke students' knowledge and less reliance on text-based questions.

TEACHER QUESTIONING AND FEEDBACK PRACTICES AFTER THE COGNITIVE REVOLUTION: REPLICATION AND EXTENSION OF GUSZAK'S (1967) STUDY

Throughout the last 20 years, classroom discourse researchers (e.g., Cazden, 1986; Guszak, 1967) have identified a predominant pattern of interaction between students and teachers. The teacher initiates an interaction; a student responds to the teacher's initiation; and the teacher may or may not react to the response. A number of theorists have referred to this pattern of interaction as initiation-response-evaluation, or I-R-E (for a review, see Cazden, 1986).

In the study reported here, we found evidence of the same pattern in teacher-led, reading group discussions at the second, fourth, and sixth grades. Rather than focusing upon yet another replication of the I-R-E pattern, however, we decided to limit our focus to certain components within the discussions: teacher questions, student responses, and teacher feedback. We will describe the present study in relation to a similar study conducted 20 years ago (Guszak, 1967), and examine shifts in the ways these components occur today as opposed to 20 years ago.

Review of the Literature

Teacher Questions

Asking a question in order to prompt learning is no doubt the oldest educational practice known to human kind. The place and purpose of questions in reading discussions, however, have a tradition of their own. Teachers ask questions for a variety of purposes: to check whether children have read the story; to see whether children were paying attention; to evaluate how well students understood the story; and, to review important information from the text. In addition, it is through questions that teachers initiate, elaborate, and direct the course of talk in a discussion (Weber, 1988).

These purposes are not entirely surprising given the field's love affair with skills, worksheets, and dittoes. For a long time we acted as though we believed that one could not teach reading comprehension directly; instead, we seemed to believe that readers "emerged" from the consistent practice of discrete skills. The most a teacher could do instructionally was monitor oral reading, provide instruction in phonics, and see to it that students had plenty of opportunity to practice answering questions that represented various comprehension skills (Pearson & Dole, 1988).

A study completed 20 years ago illustrates this style of questioning. Guszak (1967) observed the kinds of questions second, fourth, and sixth grade teachers asked students in discussions of basal stories. The total years of teaching experience ranged from 1 to 32 years ($N = 12$; $M = 13.7$; $SD = 11.9$). Each of the second and fourth grade classes, and one of the sixth grade classes were organized into three ability groups for discussion; the remaining sixth grade teachers held discussions in a whole-group format. Approximately 5 hours of discussions per teacher were audiotaped, transcribed, and analyzed.

Questions were classified according to a taxonomy Guszak (1967) developed, called the Reading Comprehension Question-Response Inventory. There were six question categories in the taxonomy, all of which were influenced by the works of Bloom (1956): recognition, recall, translation, conjecture, explanation, and evaluation. According to Guszak's (1967) scheme, recognition questions require students to use literal comprehension skills to locate information in the text. Recall questions require students to recall factual material. Translation questions require paraphrasing different portions of text, or the translation of one's understanding into a different medium, such as drawing or dramatic interpretation. Conjecture questions require predicting what might happen next or what might happen in the distant future. Explanation questions are inferential in nature and require students to generate main ideas for story information or to offer rationales for story events. Lastly, evaluation questions require judgements of worth, acceptability, or probability.

Guszak classified a question only if it related directly to textual information. Each of these questions were classified into one of the above categories. His data are reported in Table 1.

[Insert Table 1 about here.]

Guszak noted an overall emphasis on the literal question types, *recognition* and *recall*. Together, they accounted for 70.4% of the questions across the grades. Evaluation questions accounted for 15.3% of the questions teachers asked overall. For the most part, Guszak found that the evaluation questions teachers asked students did not call for the types of responses one might associate with inferential thinking; instead, he found the tendency for evaluation questions to require little more than yes/no responses without any follow-up justification. Finally, Guszak noted two trends: as grade level increased, (a) the percentage of recall questions decreased, and (b) the percentage of explanation questions increased. He viewed this as indicating a switch from literal to inferential questions as students progressed through the grades.

What kinds of questions do teachers ask today in typical reading group sessions, where oral recitation remains the dominant mode of discussion? Since cognitive theories of reading place a great deal of emphasis upon inference as an essential part of the reading process, (e.g., Anderson, & Pearson, 1984; Collins, Brown, & Larkin, 1980), we might expect that teachers in the 1980's are using more inferential questions than did teachers in the 1960's. Additionally, an important spinoff of the cognitive perspective has been a host of instructional studies designed to answer the question "Can or should comprehension skills be taught directly?" (see Tierney & Cunningham, 1984, for a summary of the movement). Since the answer to this question is a qualified yes, we might expect that the questioning portion of basal reader lessons has been freed from the expectation that it serve an instructional function, thus permitting textbook writers and teachers greater license to formulate discussion questions creatively.

Teacher Feedback

Our present use of the term *feedback* subsumes earlier characterizations of the discourse moves teachers make in relation to a student response. Teachers may *react to* (Bellack, Kliebard, Hyman, & Smith, 1966) or *evaluate* (Cazden, 1986; Mehan, 1979) student responses to preceding teacher elicitations. These reactions or evaluations have been found to cover a range of purposes, such as affirming, clarifying, extending, explaining, reshaping, or contextualizing student responses as part of the evolving fabric of group discussion (for a review, see Cazden, 1986).

Guszak performed a cursory analysis of teacher feedback as part of his study, as well. For the purposes of historical comparison, however, our interpretations about the range of teacher feedback practices in 1967 are constrained by the limits of Guszak's (1967) analysis. He classified feedback into three broad categories: extending, clarifying, and cueing. *Extending* feedback referred to efforts by the teacher to stimulate further student responses to the initial question without eliciting further information. *Clarifying* feedback referred to teacher requests that the student either repeat, clarify, or elaborate upon their response to the question. *Cueing* feedback referred to efforts by the teacher to guide or provide hints to students so that they could respond correctly to the question. The diversity of the feedback practices was further obscured when he reported the data by collapsing the three categories into one general, feedback category. We can only speculate that Guszak may have considered a more detailed examination of teacher feedback unnecessary.

What kinds of feedback are today's teachers providing students during reading group discussions? Since 1967, numerous studies have explored the effectiveness of various types of feedback in a range of curricular areas. The research to date has uncovered several interesting findings. For example, students tend to interpret the absence of overt feedback as positive feedback (Anderson, Evertson, & Brophy, 1979). Teachers tend to utilize terminal feedback where correct answers are supplied and the discussion group moves to the next question (Anderson et al., 1979; Stallings & Kaskowitz, 1974).

Regarding the effects of feedback, process or *enabling* feedback (i.e., where the teacher guides the student towards a revised understanding) is positively correlated with achievement (Anderson et al., 1979; Good & Grows, 1979; Mims & Gholson, 1977), and positive feedback is less facilitative during the acquisition of concepts than is negative feedback (Spence & Dunton, 1967; Williams, 1972).

One might expect to find a wider range of feedback practices today in comparison to 1967; both the feedback research cited and the emphasis upon reading as a constructive process would encourage it. For example, teachers today may be providing less terminal feedback, fewer instances of simple negation, less superfluous praise, more modeling of comprehension strategies, and more sustaining feedback in order to help students construct interpretations more so than in 1967.

In order to examine changes in teacher questioning and feedback practices over the last 20 years, we set out to partially replicate Guszak's work.

For the purposes of this paper, we will focus upon two of Guszak's (1967) key questions:

> How frequently do teachers ask various types of questions during story discussions in selected second, fourth, and sixth grade classrooms?
>
> How frequently are teacher questions about reading assignments met with congruent or correct responses?

To these we add a third:

> How have the types and frequencies of questions, congruence of student responses, and teachers' feedback practices changed in 20 years?

Needless to say, replication of a study which pre-dated the rise of cognitive theory raises serious methodological questions. In her synthesis of the research, Cazden (1986) cites two divergent methodological approaches to classroom discourse, *interactional analysis* (Amidon & Flanders, 1967; Bales, 1951; Flanders, 1970) and *sociolinguistics* (Bloome & Green, 1984; Cazden, John, & Hymes, 1972; Green, 1983). The methods used in interactional analysis (e.g., a priori systems for classifying data; little regard for the context in which the utterance occurs) have been characterized as too narrow in scope to capture the range of functions an utterance may potentially serve in an interaction (Delamont, 1976; Delamont & Hamilton, 1976; Heap, 1982). Guszak's methods were similar to those of interaction analysis. Consequently, it was imperative that we modify Guszak's (1967) classification schemes and his procedures for analyzing the various units of discourse.

Method

Subjects

A large, urban school district in the Midwest was contacted to see if they would be interested in taking part in the study. Eighteen teachers from four representative schools within the district volunteered. After a preliminary meeting, 15 teachers (5 per grade level) were chosen to provide a sample representative of the teachers within that district. Each of the teachers was chosen based upon years of experience, grouping practices, and teaching ability (rated as proficient by their superiors). The total years of teaching experience ranged from 1 to 28 years (N = 15; M=15.3; SD=8.02).

Students at all grade levels in this study were heterogeneously grouped for reading instruction. This was due in part to the fact that the school district sanctioned the use of only one basal throughout the K-8 system. For the most part, all of the teachers in this study adhered to the district-mandated basal program (Scott, Foresman, & Company, 1981 edition). However, some of the discussions we observed and later analyzed focussed upon texts the teacher supplied to the class as enrichment.

The discussion time reserved for second graders followed a predictable regimen. A group of students was asked by the teacher to convene in an area of the classroom set aside for reading groups. The size of these groups ranged from 6 to 10 students (with one exception, discussed below). The students sat around a table or on the floor in a circle (or similar arrangement) so they could all see the teacher. One of the second grade teachers discussed the stories in a whole-class format. This teacher stood in the front of the room while directing the discussion.

The group discussions were of two types: (a) a guided reading lesson format; or (b) a group discussion. In the case of the guided reading lesson format, the reading group time began with introductory comments by the teacher, a short discussion of the title, or procedural directions. The group then read and discussed the story in a series of short oral reading episodes by one or more students, each followed by a short teacher-led discussion comprised of questions, responses, and reactions. Students always had access to an open text during discussion.

The second grade teacher who followed a whole-class format began with an announcement to clear the desks and open the reading books. These discussions followed the same general guided reading lesson format used in the other second grade classrooms.

At the fourth and sixth grades, the discussions were held as a whole class. The students had already read the story silently, usually the day before. Before asking students to read the story silently, the teachers usually wrote difficult words on the board and defined them. Sometimes, a brief discussion of relevant background experiences occurred. The actual discussions began with an announcement to prepare for discussion. Generally, the teachers either paced about, sat on a stool, or stood while directing the discussion. The students remained in their seats, with their books open on their desks, raising their hands when they wanted to gain control of the floor.

Interviews with the teachers indicated that the sources of their questions were varied: (a) prescribed questions in the teacher's manual; (b) questions the teacher had jotted in the margins of the story during an earlier reading; and (c) moment-by-moment reactions to student responses. The interviews also indicated that the teachers felt that these discussions gave them the opportunity to both assess and facilitate comprehension (for a more detailed analysis of the source of teacher questions, see O'Flahavan, in preparation).

The teachers were informed that the study set out to examine student responses in relation to teacher questions in group discussions. Also, the teachers were told that an in-service day would be held for them later in exchange for their participation.

Procedures

All discussions were videotaped as unobtrusively as possible in the natural settings of the classrooms. A concern at the outset of the study was to minimize the effects of the presence of the camera and researcher. As a solution, the research team spent one session prior to data collection in a "cosmetic" warm-up; they taped the students in their classroom and then allowed the students to view themselves. Based upon consultations with teachers after the data had been collected, they did not perceive any impact of the presence of either the camera or the researcher upon student behavior or their performance.

All of the videotapes were transcribed. A randomly selected set of transcripts were reviewed for accuracy of transcription before we began the coding. An insignificant number of errors were detected and corrected. Coding and subsequent analysis followed.

Classification Scheme

A classification scheme was developed to account for the following data: the types of teacher-initiated questions and comments; the types and congruence of student responses; and the diversity of teacher feedback. The classification scheme used in this study is based, in part, upon similar versions found in Guszak (1967) and Meyer & Linn (1985). The scheme accounts for the nature of each utterance (in the context of other utterances) in a teacher-directed, traditional reading group discussion, while at the same time, accounting for the role of the utterance within the evolving context of the discussion itself (see Appendix A for a full discussion of the categories and identification of those categories which correlate with Guszak's scheme).

Two raters coded each utterance in all 57 discussions using the modified classification scheme. In our analysis, an utterance ranged in magnitude from a single word to an entire sentence. If two or more utterances were found in a sentence, it was due to the fact that each utterance served a *different purpose within the discussion*. For purposes of assessing interrater reliability, an arbiter marked each utterance before coding to standardize the unit of analysis.

The criteria for agreement was based upon the identification of the classification that best fit the utterance. Approximately 11% of the discussions ($n=6$) were chosen at random and coded by independent judges. In those instances where the two raters failed to reach agreement, the disagreement was noted, the discrepancies were discussed and the best fit identified. Overall interrater agreement was 92.9%. Interrater agreement ranged from 89.4 to 96.5% for each of the six discussions. When all of the discussions were combined, the range of agreement for the individual classifications ranged from 71 to 100%. The problematic classifications concerned teacher requests for an extension of a response (71.0%, teacher gives a hint (80.0%), background knowledge questions (81.2%), and teacher answers own question (83.9%). (See Appendix B for a complete listing of inter-rater agreements for each classification.) These criteria for category inclusion were refined throughout the process to best reflect the data.

Departures from Guszak

It is important to note here the differences between Guszak's classification methodology and ours. First, Guszak did not account for all teacher questions in his analysis. All of the questions which were not text-based, such as questions that dealt with the students' own experience directly, were omitted from the analysis. We have accounted for those questions and included them in our analysis, except when we make direct comparisons with Guszak's data.

We established a procedure to account for all of the questions. Raters referred to the text under discussion when classifying each question. The answer was located, and then a judgement was made as to whether the question was text-explicit/literal, text-implicit/inferential, or a background knowledge question (script- implicit, after Pearson & Johnson, 1978). If the question did not fit one of these three categories, then an alternative classification was sought. Discussion and examples of these alternative classifications--opinion/evaluation, sequence of events/summation, prediction/conjecture, translation/application, and evidence to support an answer--are provided in Appendix A.

Secondly, Guszak collapsed teacher feedback into one category. In our study, we used a more refined and elaborate scheme to classify teacher feedback, thereby enabling us to achieve a goal not within the scope of Guszak's work: a detailed profile of the discourse moves teachers made throughout the discussions. In those cases where the utterance was judged an anomaly, existing categories were refined or new categories were added to account for all of the data.

Results

Have The Questioning Practices of Teachers Changed?

For our direct comparison with Guszak's (1967) data, any questions that did not deal with the text explicitly (which were almost all what we have called "background knowledge" questions) were temporarily deleted from the analysis. As indicated in Table 2, dramatic shifts have occurred in the last 20 years. At all grade levels, recognition and recall questions have decreased dramatically, apparently being replaced by explanation and translation questions. Conjectural and evaluative questions have experienced only minor shifts.

[Insert Table 2 about here.]

This shift in questions can be seen even more dramatically in Table 3. By collapsing question types into a literal/non-literal dichotomy, the overall shift from literal questions to inferential questions is more pronounced. Furthermore, by including background knowledge questions, this shift away from literal questions is even more striking.

[Insert Table 3 about here.]

A word about background knowledge questions is necessary. We found that, across the grades, 25.3% of all the questions teachers asked were background knowledge questions. We only wish that Guszak had included these questions in his analysis. Without comparable data we do not know whether to attribute this large proportion to long-standing teacher practices or to shifts induced by constructs, like schema theory, that have led to the elicitation of background knowledge prior to, during, or after reading.

Guszak found a number of trends across grade levels. He found that teachers asked *fewer* questions which emphasized literal comprehension and *more* which emphasized non-literal comprehension as grade increased. In contrast, we did not find a clear linear trend in either direction.

Have Student Response Patterns Changed?

We include this brief discussion of student response patterns because the congruence of a response often determines whether a teacher provides feedback in the course of an interaction. Guszak (1967) defined a congruent student response as one which satisfied the substantive intent of a teacher-initiated question. In our replication, we defined congruence in the same way. However, we judged responses as either congruent or partially congruent/incongruent based upon the linguistic reactions teachers exhibited toward student responses. For example, in the case where a student responds to the teacher with what appears to be only a partial answer, the teacher may elect to follow with a request for extension:

Teacher: Johnny, what time did it occur and how did it happen?

Johnny: Uh, I'd say afternoon.

Teacher: Yes, afternoon, that's when it happened, but how did it happen?

Similarly, in the case where a student responds with an ambiguous or poorly articulated answer, the teacher may elect to follow with a request for explanation:

Teacher: Why was Sam so worried about Thomas and Bangs?

Johnny: It started to rain and they never came back.

Teacher: It started to rain and they never came back. But why would she be so worried about the rain?

These linguistic reactions enabled us to infer the existence of congruence.

It is also important to note that Guszak's (1967) analysis did not account for the differences between *immediate* and *eventual* congruence. We define immediate congruence as an exact or approximate match between student response and the teacher's expectation of a reasonable response on the first attempt. Eventual congruence would be the result of successful, enabling feedback on the part of the teacher. For the purposes of replication, we report only immediate congruence here.

We also included classifications for those situations where (a) teachers did not allow time for a student response, (b) students failed to respond, and (c) students initiated comments and questions (see Appendix A for detailed discussion of the coding scheme).

The data presented in Table 4 indicate somewhat less congruence in 1987 (77.9%) across all question types than in 1967 (88.1%). By question type, we found a slight overall decrease in congruence for recall questions (88.3% to 84.4%) and a sizeable decrease in congruence for explanation questions (84.7% to 73.2%). This decrease could be predicted from the shift toward more inferential questions documented in Tables 2 and 3. Inferential questions increase the processing demands of students and allow a wider range of plausible student responses, thereby decreasing the likelihood that a student will provide *the* response that the teacher had in mind.

[Insert Table 4 about here.]

Guszak again found clear trends across grade levels as grade increased. He found *less* congruence for recall questions and *more* congruence for explanation questions. Our data show higher overall congruence for fourth grade students across all question types than for students at the other grades.

When congruence is collapsed across all teacher elicitations, two clear trends emerge in our data. First, as the grades increase, congruence decreases linearly. At the second grade, student responses were congruent 70.7% of the time; this frequency decreased to 56.9% at the sixth grade. Second, students were given more opportunities to initiate comments within the flow of the discussion at the sixth grade (17.7%) than the fourth (7.8%) and second (10.7%) grades.

Have Teacher Feedback Practices Changed?

A 20 year comparison of teacher feedback practices is difficult to make because Guszak chose to collapse his three types of feedback, thus obscuring the diversity of teacher feedback practices. As a result, there is little we can say from his work about the kinds of feedback teachers gave students 20 years ago.

However, our classification scheme allowed us to capture the range of teacher feedback practices in 1987. The findings in Table 5 suggest that, overall, teachers responded to students primarily by affirming responses (36.0%) (e.g., Teacher: *First of all, who was Leander?* Student: *A rattlesnake.* Teacher: *Right, a rattlesnake.*), commenting on congruent responses (22.4%) (e.g., Teacher: *Why didn't the Quaker lady tell her the whole way to go so she could just go ahead and go?* Student: *'Cause she might have got caught and fired.* Teacher: *OK. Nobody wanted the next person to know the rest of the way. Each little piece was a secret. That way if one person got caught, not everybody would get caught.*), and repeating the original question (15.4%) (e.g., Teacher: *Why did it take so long to turn the water off?* Student: *The faucet was rusty?* Teacher: *Okay. Anyone else?*). As grade increased the overall frequency of feedback decreased. Thus, teachers in the second grade affirmed, commented on, or repeated questions to more student responses than teachers in the sixth grade.

[Insert Table 5 about here.]

Also, teachers and students tended to reverse roles more frequently as the grades increased. Sixth grade teachers for example, responded to *student*-initiated responses or questions more often (14.4%) than did either second or fourth grade teachers. This finding is consistent with other data indicating that sixth grade students initiated more responses and questions than students in the earlier grades.

From these findings we can conclude that teachers in 1987 are providing two general kinds of feedback. The first is a direct form of terminal feedback, which is accomplished either by affirming student responses or by commenting on student responses. The second is a slightly less direct form of terminal feedback, where teachers repeated the question either for the same student or for other students in the discussion.

These two types of feedback account for almost three-fourths of the teacher reactions overall. We observed fewer teacher feedback behaviors that promoted extended discussion of a question by inviting or encouraging students to extend or explain their responses. A final note: Guszak did report his collapsed feedback categories within the context of his QRU analysis (see below), and he found that almost all teacher-student interactions had *no* teacher feedback. In contrast, we found that in almost all teacher-student interactions teachers *did* provide feedback; most of this was terminal feedback, but it did include some extending feedback, resulting in longer and more complex interactions than Guszak witnessed.

Have Patterns of Teacher-Student Interaction Changed?

Guszak (1967) defined various clusters of teacher elicitations, student responses, and teacher feedback as the *Question-Response Unit* (QRU). The QRU represented the boundaries wherein the anatomy of an exchange could be examined; Guszak's unit of analysis is similar to the I-R-E pattern found by Mehan (1979). A QRU included the initiating teacher's question, any subsequent remarks made by the teacher, the student response, and any teacher comments made *before the attention shifted away from the original question*.

We found it difficult to replicate Guszak's methodology for his QRU analysis; the method section of his article was not sufficiently detailed to permit strict replication, nor did they account for all of our data. Therefore, we developed procedures which followed Guszak's definition, and we included the following modifications: (a) a QRU could be initiated by a student; (b) a QRU could be terminated by a student; and (c) a QRU could begin with a repeated version of the original teacher question.

Assuming that our replication was even remotely faithful to his methods, we did find a major difference in dominant interaction patterns. Guszak found 86.1% of his QRU patterns across all grades were a question followed by a congruent response. We found this pattern in only 5.7% of our QRUs. What we found instead were more varied interactions, with teachers providing many kinds of feedback in an almost infinite array of patterns and lengths.

We observed a wider range of interactions not found by Guszak. For example, teachers spent a noticeable amount of time (17.0%) making introductory comments. Teachers also asked a fair number of questions (11.8%) and then did not allow time for a student response. We came to call such utterances *discussion place holders*; teachers use them to stall for time while they reformulate the question they all wanted. In addition we found instances (9.6%) of teachers providing terminal feedback--affirming or negating a student response. Guszak did not report such feedback at all. Generally speaking, the discussions we observed were dissimilar to those Guszak (1967) characterized as rapid-fire, question-response interactions. Consider the following excerpt from one of the fourth grade discussions:

Teacher: . . .what about their meals? (pause)

Student 1: She has potatoes almost everyday, and then like, once a month she has fish.

Teacher: That is right, they had potatoes for breakfast, lunch, and dinner, and once a month they had fish. I think the whole purpose of the story was to tell us what they were looking forward to in the winter.

Student 2: Also, in the winter they got meat to eat.

Teacher: That was the purpose of the story . . . when the pig grew up, there was going to be something to eat with the potatoes. Yes, Elizabeth?

Student 3: Also, when the father went out and caught the bear they had bear meat to eat. . . .

In this excerpt, the teacher has initiated a line of thought by asking a question about "their meals." Student 1 responds congruently and the teacher affirms the response by (a) stating the fact that the response was congruent, and (b) repeating the response, a form of affirmation. The teacher then follows with a hypothesis which is not taken up by the group; instead, the students continue to generate responses to the initial question, while the teacher reacts to these responses by trying to contextualize them into the line of thought.

An interesting sidelight of the teacher-student interaction data focused on how interactions were initiated and terminated. Across all three grades, teachers initiated 92.7% of the interactions, while students initiated only 7.3%. Of the teacher-initiated interactions, 53.0% were questions, 18.8% were repeated questions, and 20.9% were introductory comments.

Additionally, the final utterance in each QRU pattern signals the termination of that QRU. Across the grades, 85.8% of these utterances were attributed to teachers, only 9.2% were attributed to students, and 5.0% were attributed to unspoken aspects of discourse. The most frequent types of utterances marking the end of a QRU for the teachers were sustaining feedback (38.0%), terminal feedback (35.6%), responses to student initiations (7.6%), managerial or monitoring comments (3.2%), and questions (1.4%). The most frequent types of student utterances were congruent responses (6.9%) and incongruent responses (2.3%). And finally, the two unspoken aspects of discourse were *wait time*, where the teacher pauses after a question, but no student offers a response (2.0%), and *no wait time*, where the teacher does not allow time for a student response (3.0%).

Limitations and Conclusions

The fact that the teachers in this study were employed within the same school district and utilized the same basal program appears to negate the generalizability of this study's findings to all classroom contexts. The fact that the groups were heterogeneous at the second grade is unique. Had we included classrooms which stratified their reading groups by ability, we might have found different patterns of interaction as well as different types of teacher questions and feedback. Similarly, had we studied a more diverse district or collected data from a number of other districts, a wider range of teaching practices may have been observed.

These factors may only *limit* the generalizability of our findings, however. For a number of reasons, we believe the findings do generalize to many classrooms where the teacher leads the discussion by taking every other turn. First, the dominant participation structure (Philips, 1972) in the discussions followed the common I-R-E pattern. This pattern has been found to occur in discussions involving a wide range of grades and settings (Cazden, 1986, 1988). The fact that the pattern was well-established in the schools we examined lends support to the generalizability of our findings. Secondly, the four schools in

schools we examined lends support to the generalizability of our findings. Secondly, the four schools in our sample are representative of a large district which comprises urban and suburban-like schools. Thirdly, the teachers who volunteered for this study exhibited varied approaches to teaching within the framework of the basal program. These teachers represented a wide range of ages, experiential backgrounds, and abilities. Lastly, our database includes thousands of data points, representing 58 discussions from three grade levels.

What can we say about the impact of cognitive theory upon teacher questioning practices if we look at two snapshots--one from 1967, and the other from 1987? Clearly, the questioning practices have undergone a sizeable shift from emphases upon literal comprehension (Guszak, 1967) to non-literal comprehension. The findings from this replication are consistent with the tenets of a schema-theoretic approach to constructing meaning from text (Anderson & Pearson, 1984), especially as that approach manifests itself in the interactional behaviors of teachers during guided reading activities and post-reading discussions. The findings are promising in light of the fact that higher cognitive questions have been found to promote student achievement (Redfield & Rousseau, 1981). Proportionally, teachers are probing students' background knowledge and asking questions that elicit opinions, evaluations, and inferences more now than 20 years ago.

Two by-products of this shift in questioning style have emerged. Today's emphasis on non-literal aspects of the reader-text interaction has infused more complexity into the basic I-R-E pattern of interaction, though less so at the lower grades. In 1967, for example, most of the interactions between teachers and students in teacher-directed reading groups were clearly defined: teachers asked a preponderance of literal questions and students offered compliant responses. Twenty years later, however, teacher-student interactions appear to be less constrained and the answers students provide prove to be less congruent on a first attempt.

At the same time, the wealth of research during the late 1970's and early 1980's into teacher effectiveness (cf. Rosenshine & Stevens, 1984) has apparently left its mark upon today's feedback practices. Students respond less congruently to more reader-based modes of questioning, and teachers are then compelled to react with enabling feedback (Anderson, et al., 1979; Good & Grows, 1979; Mims & Gholson, 1977). As in 1967, the text continues to be the focus of discussion, but the discussions analyzed in this study began to draw upon resources that exist outside of the text, such as a student's experience.

And yet, the more things change, the more they stay the same. This shift from literal to non-literal questioning styles and the infusion of more enabling styles of feedback have done little to change the underlying participatory structure of reading group discussion found in Guszak's (1967) time. Many of the suspect characteristics of group discussion persist: literal-emphasis questions continue to account for nearly a third of all questions; teachers initiate and terminate a disproportionate amount of the interactions; and, teachers monopolize the flow of discussion by taking every other turn. Most discussions we observed resembled the type of interactions Lemke (1982) described as "a teacher monolog" in which some key informational statement has been transformed into a strict teacher question/student answer pair, where the teacher then validates the exchange with an evaluation of it. These monologs looked more like recitation than real discussion, as Bloom (1954) described it *prior* to the cognitive revolution:

> . . . discussion is a cooperative attack on a common set of problems, based upon a common set of data, materials, and experiences, in which the problem is pursued to as complex and deep a level as possible." (p. 38)

This report initially set out to answer an important, though narrowly defined, historical question: Has cognitive theory had an impact upon the questioning and feedback practices of teachers in reading group discussions? The answer is a qualified *yes*; yet, many important theoretical, research, and pedagogical questions remain, and many of these are beyond the scope of this paper. For example,

while it may be that highly controlled group discussions have a beneficial effect upon content learning (Cazden, 1988)--albeit comprehension of the text-at-hand--long-term participation (or the lack thereof) in I-R-E structures may seriously handicap a participant in less constrained discussion formats. Participants may begin to view discussion as a time for providing answers to teacher questions, rather than a time, as Bridges (1979) suggests, "to put forward more than one point of view upon a subject" (p. 16). Discussions in which teachers are responsible for executive control (e.g., monitoring comprehension and group process) may not provide the necessary, contextualized practice required for later participation in more open, democratic discussion.

Some have suggested that recitation-like structures that involve a large proportion of literal questions and corrective feedback enable the teacher to attain a priori instructional goals, maintain high levels of attention, especially when the topics are algorithmic and factual (Stodolsky, Ferguson, & Wimpelberg, 1981). But at the same time, Dillon (1983; 1985) suggests that the practice of asking questions to which the answers are already known and the rapid pace at which these are asked can impede movement towards discussion, as Bloom (1954) defined it above. If the goal is to enable students as discussants and readers, then instructional initiatives may need to focus upon the underlying participation structure of discussion, rather than attempting to increase the quality of a teacher's questions or feedback within the I-R-E triad.

In order to answer these and similar questions, future research needs to take a broader view of discussions than the view we adopted in this paper. Frequencies--the level of analysis reported 20 years ago and therefore replicated here--are illustrative; however, more comprehensive analyses that focus upon the sequential nature of group interaction and the multifunctional nature of utterances should serve as points of departure (e.g., Mehan, 1979; Sinclair & Coutland, 1975). Future studies should also begin to explore the effects of participation upon factors related to the social and cognitive milieu, such as teacher and student perceptions, the influence of the basal reading program upon the source of teacher questions, individual reading comprehension, and the subsequent transfer of an individual's group process knowledge.

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Table 1

Guszak's Percentages of Each Question Type in Grades 2, 4, and 6

Grade	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Evaluation (31)
2	12.3	66.5	0.2	5.7	3.8	11.5
4	16.3	48.4	0.6	6.9	7.4	20.4
6	10.2	47.6	2.4	7.9	18.1	13.8
TOTAL	13.5	56.9	0.6	6.5	7.2	15.3

Note. Guszak did not provide frequencies.

Table 2

O'Flahavan, Hartman, and Pearson's Percentages and Frequencies of Each Question Type in Grades Two, Four, and Six

	With Background Knowledge Excluded							With Background Knowledge Included							
Grade	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Evaluation (31)	Total	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Evaluation (31)	Background Knowledge (30)	Total
2	2.3	48.3	6.0	3.2	25.5	14.7		1.6	34.8	4.4	2.3	18.4	10.6	27.9	
(f)	(36)	(791)	(99)	(53)	(417)	(241)	(1,637)	(36)	(791)	(99)	(53)	(417)	(241)	(633)	(2,270)
4	2.4	34.9	6.6	3.7	30.1	22.3		1.9	25.7	4.9	2.7	22.2	16.4	26.2	
(f)	(25)	(357)	(68)	(38)	(308)	(228)	(1,024)	(25)	(357)	(68)	(38)	(308)	(228)	(365)	(1,389)
6	3.2	37.6	6.9	4.3	29.9	18.1		2.7	29.5	5.4	3.4	23.1	14.2	21.7	
(f)	(22)	(249)	(46)	(29)	(195)	(120)	(661)	(22)	(249)	(46)	(29)	(195)	(120)	(183)	(844)
TOTAL	2.6	40.2	6.5	3.8	28.5	18.4		2.1	30.0	4.9	2.8	21.2	13.7	25.3	
(f)	(83)	(1,397)	(213)	(120)	(920)	(589)	(3,322)	(83)	(1,397)	(213)	(120)	(920)	(589)	(1,181)	(4,503)

Table 3

Question Emphasis Percentages in Grades Two, Four, and Six

	Guszak						O'Flahavan, Hartman, & Pearson					
	Literal Emphasis		Non-Literal Emphasis				Literal Emphasis		Non-Literal Emphasis			
Grade	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Evaluation (31)	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Evaluation (31)
2	78.8			21.2			50.6 36.4*			49.4 63.6*		
4	64.7			35.3			37.3 27.6*			62.7 72.4*		
6	57.8			42.2			40.8 32.2*			59.2 67.8*		
Total	70.4			29.6			42.8 32.1*			57.2 67.9*		

*Background Knowledge (30) Included

Table 4

Percentages and Frequencies of Immediate Question-Response Congruence in Grades Two, Four, and Six

	Guszak						O'Flahavan, Hartman, & Pearson					
Grade	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Total	Recognition (37)	Recall (34)	Translation (32,36)	Conjecture (33)	Explanation (35)	Total
2	94.6	92.5	100.0	95.1	80.0	92.4	58.3	84.4	94.1	93.8	72.7	80.7
(f)							(7)	(54)	(16)	(15)	(32)	(124)
4	91.9	88.1	50.0	91.5	86.0	81.5	83.3	87.0	76.9	100.0	81.1	84.5
(f)							(5)	(60)	(10)	(5)	(43)	(123)
6	100.0	84.4	80.0	100.0	88.1	90.5	50.0	81.8	61.5	85.7	65.8	68.5
(f)							(4)	(45)	(8)	(12)	(25)	(94)
Total	95.5	88.3	76.7	95.5	84.7	88.1	63.9	84.4	77.5	93.2	73.2	77.9
(f)							(16)	(159)	(34)	(32)	(100)	(341)

Table 5

Percentages and Frequencies of Teacher Feedback Categories in Grades Two, Four, and Six

Grade	Affirm Response (01)	Negate Response (02)	Request Extension (04)	Request Explanation (05)	Give Hint (06)	Give Answer (07)	Extend Incongruent Response (081)	Extend Partially Congruent Response (082)	Extend Congruent Response (083)	Re-examine Text (09)	Repeat Question (10)	Conversational Response (11)	Total
2	38.5	2.5	3.2	2.9	3.1	1.6	1.2	0.9	23.1	1.5	16.2	5.3	
(f)	(1,505)	(98)	(124)	(114)	(121)	(61)	(47)	(34)	(903)	(59)	(631)	(208)	(3,905)
4	36.0	2.2	4.2	3.4	5.2	2.4	0.9	2.1	21.9	1.0	15.8	4.9	
(f)	(1,060)	(63)	(123)	(101)	(154)	(72)	(24)	(61)	(644)	(29)	(465)	(145)	(2,941)
6	31.6	2.3	3.4	3.6	3.1	1.6	2.0	2.2	21.7	0.6	13.5	14.4	
(f)	(749)	(55)	(80)	(85)	(74)	(39)	(48)	(52)	(515)	(14)	(320)	(342)	(2,373)
Total	36.0	2.3	3.5	3.2	3.8	1.9	1.3	1.6	22.4	1.1	15.4	7.5	
(f)	(3,314)	(216)	(327)	(300)	(349)	(172)	(119)	(147)	(2,062)	(102)	(1,416)	(695)	(9,219)

Appendix A

Interaction Categories

Teacher Elicitation Categories

30 Background Knowledge
31 Opinion/Evaluation
32 Sequence of Events/Summation
33 Prediction/Conjecture
34 Text-Explicit/Literal
35 Text-Implicit/Inferential
36 Translation/Application
37 Evidence to Support an Answer

Teacher Comment Categories

40 Managerial
41 Introductory/Transitional
42 Group Monitoring/Metadiscourse

Student Response Categories

12 Teacher Does Not Allow Time for Student Response
25 No Response (Silence)
26 Incongruent Response (or Partially Congruent)
27 Congruent Response
50 Student Initiations

Teacher Feedback Categories

01 Affirms Response
02 Negates Response
04 Requests Extension of Response
05 Requests Explanation of Response
06 Gives Hint
07 Gives Answer
08 Extends or Comments on Response
  081 Incorrect
  082 Partially Correct
  083 Completely Correct
09 Suggests Re-examination of Text
10 Asks the Same Question Again
11 Conversational Teacher Response

Interaction Categories

O'Flahavan, Hartman, & Pearson 1987

Teacher Elicitation Categories

--BACKGROUND KNOWLEDGE (code 30)

These elicitations probe the student's prior knowledge or experiences.

- Teacher: . . . what kind of illness did he [a character] get from going to Blue Rock and getting caught in all that storm? Jane?
  Student 1: Laryngitis.
  Teacher: Laryngitis. *And what is laryngitis?* . . .
  Student 2: . . . when you can't talk; when your voice is gone . . .

- Teacher: . . . Ok, it [the story] opens up in what city and state? John?
  Student 1: Vinland, New Jersey.
  Teacher: Ok, Vinland, New Jersey. *Anyone ever been there?* (Pause) *Has anyone ever been to New Jersey?* (Pause) *Tom, you've been to New Jersey?*
  Student 2: Yeah.

Additional examples collected from the data are:

- What does "gush" mean, Sheffield?
- It rains every day, doesn't it, sometimes?
- Billy, tell us about the cars you have at home.
- Do you remember a story which is similar to this one?

--OPINION/EVALUATION (code 31)*

Corresponds to Guszak's Evaluation question type. These elicitations require students to express their feelings or reactions to events in the story or to the response of other students. Value judgments, likeliness of probability, or a choice between alternatives would be included in this category. Not to be confused with elicitations which do not require actual judgments, as in interpretations or inferences.

- Teacher: . . . *Ok, do you think Sam did the right thing when she gave the gerbil to Thomas?* Tell me why you think as you do. Do you think she did the right thing, Steven?
  Student: Yes, because she liked him . . .

- Teacher: Ok, Harriet Tubman lived where, Tiffany?
  Student 1: She lived . . .
  Teacher: If you can't give me an exact place, give me an idea of location.
  Student 1: Maryland.
  Teacher: Ok, Maryland. *Would you agree with Maryland, Ron?*
  Student 2: Yes . . .

Additional examples collected from the data are:

- Do you think the ending of this story is realistic?
- Do you think then, that she might have gone to jail instead?
- So, you're going to say then that this is fiction or non-fiction?

--SEQUENCE OF EVENTS/SUMMATION (code 32) *

Partially corresponds to Guszak's Translation question type. These elicitations require the student to indicate events leading to another event, or to provide a brief retelling of part or all of the story. Answers are not found stated literally in the text; they require a "summing of the parts." Most importantly, the relationship between the elicitation and its response dictate whether an elicitation is of this type.

- Teacher: . . . Did Freddie have his own room at home? Sheffield.
  Student 1: He used to.
  Teacher: He used to. You're right. He used to have his own room at home and, *Amanda, what happened?*
  Student 2: He used to have his own room, but when Ellen was born she got her own room, and he had to share his room with his, uh, brother . . .

- Teacher: All right, now. *How did Rufus decide what soldier to give the washcloth to,* Charles?
  Student: Um, his washcloth was big, and he was looking for the general, but they all looked like generals and so he found a man that had a big face, and his washcloth was for a big face, and so he gave the washcloth to him.

--PREDICTION/CONJECTURE (code 33) *

Corresponds to Guszak's Conjecture question type. Students are required to make inferences, predictions and conjectures about what will happen next in the story, or what might have happened if the situation were different. Additionally, these elicitations could have asked the students to hypothesize about situations which were moderately related to the story, as in the second example, below.

- Teacher: Ok, now. *How about thinking of how she's going to rescue the people*. Everything you told me about 80-year-old people can be very, very true. *And she's going to go in during the night, wake them up, and run off with them*? (no pause) What's a problem with that, Tony?
  Student: They might have a heart attack.

- Teacher: Right. The teacher had told him to put it (name) on there, she had never said they were going to take them off, and yes they did hope that somebody would write to them. Now, he only put Rufus M. on his washcloth.
  If somebody were going to write to you, do you think we'd get it today, Karen, if you put Karen M. since your last name starts with M? (no pause)
  Student: No.

--TEXT EXPLICIT/LITERAL (code 34) *

Corresponds to Guszak's Recall question type. The elicitations have explicit references within the text; the elicitation, in effect, is a focused cue for the information found in the text. The answer is sentence-bound, rather than an answer which requires the compilation of a number of ideas from different sentences. These are elicitations which typically deal with detail of the story and require literal comprehension.

- The text:

> Suddenly the air was filled with a sharp squeal. She saw Bountiful pushing against the side of the pen. The pig was nearest the cabin with its nose between the logs. Its small, round eyes rolled back in fear. On the far side of the pen, a black bear pushed a paw between the logs of the pen. It reached for Bountiful with its long, sharp claws.

The elicitation:

Teacher: *What was after Bountiful, what kind of animal?*
Student: A bear.

Another type of text explicit/literal elicitation is one which asks the student(s) to "fill in the blank."

- Teacher: Uh huh, the light makes you wake up, so, it's going to be hard to share a room with someone.
  Student: And you can hardly go to sleep when the light is on.
  Teacher: You're right. But what did Freddie's mom call it . . . *she called it the . . .*
  Student: Boy's room.
  Teacher: The boy's room.

--TEXT-IMPLICIT/INFERENTIAL (code 35) *

Corresponds to Guszak's Explanation question type. These elicitations have implicit references in the text; the elicitation requires inference in order to construct a plausible answer. Answers to such elicitations are often found in more than one sentence. More inference is required than literal comprehension.

Example:

- The text:

> Suddenly the air was filled with a sharp squeal. She saw Bountiful pushing against the side of the pen. The pig was nearest the cabin with its nose between the logs. Its small, round eyes rolled back in fear. On the far side of the pen, a black bear pushed a paw between the logs of the pen. It reached for Bountiful with its long, sharp claws.

The question:

Teacher: *How did Amelia know that Bountiful was in trouble?*
Student: Because she saw the bear ripping up the pen.

--TRANSLATION/APPLICATION (code 36) *

Partially corresponds to Guszak's Translation question type. These elicitations require the student to apply what he has learned from the story and translate or apply that knowledge to another medium, to pictures in the book, etc.

- Teacher: Ok, he [a character] even saved the egg and he marked that it was one of Snobber's eggs.
  Student 1: It said "English sparrow that was laid by Snobber."
  Teacher: Ok, good, he's a little more specific, that's good. Ok, getting back to the question, *would anyone else change the story*? (no pause) I think it would have been neat if Snobber would have hatched her two eggs, and . . .

Additional examples collected from the data are:

- *If you were going to paint a picture of this story, what would you do?*
- *Do these pictures capture the story well?*

--EVIDENCE TO SUPPORT ANSWER (code 37) *

Corresponds to Guszak's Recognition question type. These elicitations require the student to provide evidence from the story to support a response. This is done when a student has come up with a congruent response; if there is an incongruent response, then it becomes a code (09), where the teacher suggests re-examination of the text to, "See where you went wrong."

- Teacher: Daniel, who was responsible for the fire?
  Student: The new boy.
  Teacher: *Could you read the part that proves this?*

- Teacher: It was a big flood. And do you think Benjamin's father was nervous?
  All: Yeah.
  Teacher: *What did he say in the book that told you he was nervous?* (no pause) *What did he say into the telephone?* (pause) *What, did he yell into the phone?*
  Student 1: Help!

Teacher Comment Categories

--MANAGERIAL (code 40)

The teacher gives directions to the group which are out of the realm of the discussion of the text. Comments having to do with oral reading cues or skill instruction are included in this category. Additionally, directions which ask the student to repeat a response are also included here. Comments which open and close discussions are also included here.

- Opening the discussion:

  Teacher: *Open to page 248.* Ok, what was the title of the story we read yesterday?
  Student: "The one in the middle is the green kangaroo."

- Closing the discussion:

  Teacher: You like chocolate, too?
  Student: Yes.
  Teacher: *Ok, very quietly, close your books.*

Additional examples collected from the data are:

- *Look at the picture on page 235 of "Duck and Bear."*
- *Let's read page 14 together.*
- *What? Repeat that, please.*

--INTRODUCTORY/TRANSITIONAL (code 41)

The teacher makes introductory comments which serve as transitions from one line of thought to another, or make comments which serve as an anticipatory set for the next question.

- Teacher: *. . . When you have oatmeal in the morning, oatmeal is also made from oats, too. They had to raise the crops and potatoes were the easiest things that would hold up. Alright, during the time when they got there, they had something good happen to them, and it happened because somebody was generous.* Can you tell me what happened, what good fortune they had?

Additional examples collected from the data are:

- *Okay, now for the next question.*
- *Before we begin to talk about how he achieved the career of a scientist, let's look first of all at Michael Faraday's personality.* What was he like?
- *Now, everyone has known someone who is selfish, and in this story we have a little girl who thinks of no one but herself.* What happens to this girl to let us know that she is selfish?

--GROUP MONITORING/METADISCOURSE (code 42)

These are comments which the teacher uses to make the discussants aware of certain aspects of the discussion, such as digressions, turntaking, summary statements, and the quality of the discussion. These comments can be directed towards an individual or the whole group.

- **Teacher:** The boy's room. So the boys had their own room and they had to share things, and Ellen had her own room to herself.
  Student: Miss Smith --
  Teacher: *Shhhh. Let's talk about this a little more.* What did Freddie hear about at school?

- **Teacher:** What else do you like about fairy tales, Steven?
  Student 1: What they are doing and saying.
  Teacher: What they are doing and what they are saying? (no pause) *Okay, Lester?*
  Student 2: The magic.

- **Teacher:** . . . Why do you think dad went after him with a rifle, George?
  Student 1: So they could get food.
  Teacher: Alright, that's one reason. Jeff, could you think of another reason?
  Student 2: To get him away from the pig.
  Teacher: Right. Ok, two reasons. The bear made good food for them, but also he's wounded, and he might be angry and come back and be more determined than ever to get the pig. *So, first of all to save the pig, and second of all for the meat.*

- **Teacher:** Being himself because he [a character] was proud of himself because he did a good job. Should he have been proud of himself?
  All: Yes.
  Teacher: Yes, he did do a nice job.
  Student 1: I would.
  Teacher: I would have been, too. *Ok, you did a good job.*

Additional examples collected from the data are:

- *We're getting off the point, aren't we?*
- *One at a time, please.*
- . . . that could be true, yes. *Ron?*
- *Ok, let's hold on before we get into that.*

Student Response Categories

--TEACHER DOES NOT ALLOW TIME FOR STUDENT RESPONSE (code 12)

In this situation, the teacher does not pause after an elicitation, and goes on to another question or comment. There are a number of reasons why a teacher may not pause for student response: the teacher might "think out loud" and offer a number of variations upon a single probe before settling upon the revised form; the teacher might survey the students who are raising their hands awaiting nomination and continue to rephrase the question before nominating a particular student. This category is actually under the teacher's control; however, it is listed under Student Response for bookkeeping reasons only. Frequencies from this category will not be integrated with the values from codes 25-50, below.

- **Teacher:** How would you feel if everything was always the same, breakfast, lunch, and dinner, if you wanted dessert or something you had to have carrot cake? (*no pause*) And everytime you went outside to bring your teacher some nice flowers, they had to be tulips? (*no pause*) Ok, how would you feel about that, Dimitria?
  Student: Bored.

--NO RESPONSE (code 25)

Teacher pauses after a question, implicitly communicating to the group that a response would be welcome, though no student offers one.

- Teacher: Ok. He became involved in fixing books. Did he initially fix books? (*pause; no response*) Let me ask this question. By whom was he employed in his first job? (no pause) What was the gentleman's name? Scott?
  Student: Mr. Reebows.
  Teacher: Reebows. Mr. Reebows . . .

--INCONGRUENT RESPONSE (OR PARTIALLY CONGRUENT) (code 26)

The response given by a student is incongruent or only partially congruent with respect to the answer the teacher will accept as "correct" or suitable. Responses were judged incongruent based upon the ways the teacher responded to the student comment.

- Teacher: Number two. Describe Toad's house. Isaac.
  Student: *He was . . . he had pots and pans, and a little oven, two bunk beds.*
  Teacher: Ok. Do you think that was . . . what were you describing there? (no pause) That was not his house.
  Student: The cart.

--CONGRUENT RESPONSE (code 27)

The answer supplied by a student to a teacher question is considered acceptable by the teacher. Responses were judged congruent based upon the ways the teacher responded to the student comment.

- Teacher: Was that story about the camel a real story or imaginary story . . . a pretend story? (no pause) Was it called fantasy or realism? Michelle?
  Student: *Fantasy.*
  Teacher: It was fantasy. We know that the camel did not really get his hump in that manner . . .

--STUDENT INITIATIONS (code 50)

There are three types of student-initiated discourse moves.

1) Student initiates a comment

   Another student comments on another student's response. This could be an extension of a response, explanation of a response, or a critique of some sort.

- Student 1: Like if there was more than one person, they would have to make sure the escape route is safe.
  Teacher: Ok. If I knocked out one link in the underground railway, let's say the sheriff comes along and finds someone, arrest those people and they're gone. That means the next person coming along the railway gets this far and he's stopped. That's a problem. Craig?
  Student 2: *He could get somebody and tell them, like he could tell . . .*

2) Student initiates a question

Student directs a question to teacher or the group, for either clarification or a new line of thought.

- Teacher: Ok, so Snobber can take care of his own. On her own, she would go out and just eat some of the greens, so that's what her diet consisted of.
  Student 1: *What do you mean, "greens?"*
  Teacher: By greens I mean leaves. Ok, we are talking about the leaves.
  Student 2: *When you said he had to feed her, maybe she could have died because like when a mother feeds it, it pecks at its beek, Snobber might have thought it was his mother.*
  Teacher: Well, that's true, too. Chad?
  Student 3: *Well, how did Snobber get his name?*
  Teacher: Now, that's a good one . . .

3) Student suggests re-examination of text

Student either suggests or models re-examination text in an effort to clarify an answer (whether it is his own or someone else's).

- Teacher: Ok, so we have three main characters in this story, don't we?
  Student 1: Four.
  Student 2: No, there are three. *Look at the first page . . .*

Feedback Categories

--TEACHER AFFIRMS RESPONSE (code 01)

The teacher makes it clear that the answer to the question posed has been provided or, at the very least, an attempt has been made. This could be a simple "Yes, that is correct," or restating the answer given in verbatim or paraphrase form. Partially congruent responses (incomplete responses) can be affirmed.

- Student: She [a character] could have built a fire. Bears don't like fires.
  Teacher: *Bears don't like fires?* (no pause) *Ok. Good.* Trina? (pause; no answer) Do you think . . . what do you think about a bear?

- Teacher: And the little boy had a very good what, Latisha?
  Student: Imagination.
  Teacher: *He had a very good imagination.*

--TEACHER NEGATES RESPONSE (code 02)

Teacher makes it clear that the answer provided to the question posed is insufficient. It could also be a simple negation or a negation followed by a restatement of the incorrect answer in verbatim or paraphrase form.

- Teacher: Who burned his hand in the story?
  Student: Georgie.
  Teacher: *No, Georgie was not the one who burned his hand.*

--TEACHER REQUESTS EXTENSION OF RESPONSE (code 04)

The teacher simply asks for more. It is usually marked by a qualified affirmation or negation. The teacher can request an extension of the answer given, or ask other students to extend upon another student's answer, but the request has to relate directly to a response, rather than serve as a repeated question.

- Teacher: Johnny, what time did it occur and how did it happen?
  Student: Uh, I'd say afternoon.
  Teacher: Yes, afternoon, that's when it happened, *but how did it happen?*

- Teacher: Where does it take place, Johnny?
  Student: It takes place on a farm.
  Teacher: *Where, in what state?*
  Student: Wisconsin.
  Teacher: Wisconsin. It takes place on a farm in Wisconsin . . .

--TEACHER REQUESTS EXPLANATION OF RESPONSE (code 05)

Teacher requests an explanation of answer given to posed question. This request is usually marked by a qualified affirmation or negation. This is different than merely asking a student to extend an answer, because the first answer may be complete, but the teacher is asking the student to either explain or justify his/her answer. These requests must refer directly to a word or idea in a previous student response.

- Teacher: Why was Sam so worried about Thomas and Bangs?
  Student: It started to rain and they never came back.
  Teacher: It started to rain and they never came back. *But why would she be so worried about the rain?*

--TEACHER GIVES HINT (code 06)

Teacher prompts with a specific memory probe in an attempt to correct someone's thinking or understanding. This is not to be confused with (04), where the teacher may prompt to extend an answer.

- Teacher: Ok, he did, now that was just, that was not a fact, though. That was not a fact, that was an opinion. He did have a sister that had been in trouble. And he was related to a group that, they weren't the best club to be in. *There's still one more thing.* Josh?
  Student: That he got caught stealing . . .

- **Teacher:** Ok. How else would you describe both of them?
  Student 1: Ugly.
  Teacher: Ugly?
  Student 1: Yeah.
  Student 2: Muscular.
  Teacher: Muscular? (no pause) What else? (no pause) *One other word.*
  Student 3: Like, strong.
  Teacher: They were both strong . . .

--TEACHER GIVES ANSWER (code 07)

The teacher poses a question, then answers it. In some cases, students may attempt but never respond with anticipated answer. In other cases, the teacher may answer posed questions without allowing a student response.

- **Teacher:** Ok, getting back to the question, would anyone else change the story? (no pause for students to answer) *I think it would have been neat if Snobber would have hatched her two eggs, and maybe he would have three pet birds.* What else could have happened, Carsten?
  Student: I think it would have been better if Snobber would have . . .

- **Teacher:** Ok. Why was Toad unable to sleep the second morning of the trip? Emmie?
  Student 1: Able?
  Teacher: Unable. J.C.?
  Student 2: They . . .
  Teacher: Lisa.
  Student 3: Because his car was wrecked.
  Teacher: No. Chad.
  Student 4: Um, because, um, Toad . . .
  Teacher: No. Karen.
  Student 5: Because, um, he didn't want to bother Frog . . . I mean Toad, because he was sleeping soundly.

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[The discussion continues.]

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Teacher: *Remember the first morning, Toad slept all morning while Mole and Rat went out getting stuff for breakfast and getting the horse out of the pasture and stuff like that. They did all the work the first morning. The second morning, they decided he was going to do his fair share of chores this morning, so they bounced him up and dragged him out of bed and made him do his fair share.* Ok. Question number 8 . . .

--TEACHER EXTENDS OR COMMENTS ON RESPONSE (code 08)

The teacher extends or comments upon a response that a student has generated. The comments must be relevant to the student response. Since comments which fall into this category can occur with various types of student responses, it is divided into three subcategories.

1) Teacher extends or comments upon an incongruent response (code 081)

The teacher either explicitly or implicitly states that response is incorrect, then may extend the answer in a corrective fashion, or comment on the response.

- Teacher: Describe Mole to me. Mole.
  Student: He was always following Rat's orders, and stuff like that. Rat's slave.
  Teacher: No, he wasn't Rat's slave. *He was very loyal to Rat.*

2) Teacher extends or comments upon a partially congruent response (code 082)

The teacher either explicitly or implicitly states that response is only partially correct, then may extend the answer or comment upon it in a corrective way.

- Teacher: You're right. He said, "Why would they pick you?" Why do you think Mike said, "You? Why would they pick you?" (no pause) Why do you think he said that?
  Student 1: Because Mike's not in the play.
  Teacher: *Ok, maybe because Mike's not in the play and Freddie is.* Why else do you think he said that?
  Student 2: Because he's (Freddie) only in second grade.
  Teacher: Right. He's just in second grade . . .

3) Teacher extends or comments upon a congruent response (code 083)

The teacher either explicitly or implicitly states that response is completely correct, but may still feel the need to extend or comment further in a supportive fashion.

- Teacher: Why didn't the Quaker lady tell her the whole way to go so she could just go ahead and go?
  Student: 'Cause she might have got caught and fired.
  Teacher: Ok. *Nobody wanted the next person to know the rest of the way. Each little piece was a secret. That way if one person got caught, not everybody would get caught.*

--TEACHER SUGGESTS RE-EXAMINATION OF TEXT (code 09)

The teacher may state that the answer is totally incorrect or partially true, but follows that feedback with a suggestion that the answer can be found in the text and directs student attention back to the text in search of the answer.

- Teacher: What are they doing, Kevin?
  Student: They're wiping (their feet).
  Teacher: He's wiping them. How can you tell?
  Student: Because he's moving them.
  Teacher: Right. *See that his left foot is off the mat–half on the mat and half off the mat.* And isn't that what you do when you wipe your feet?

--TEACHER ASKS THE SAME QUESTION AGAIN (code 10)

Teacher restates question in either verbatim or paraphrase fashion. This could be a result of a string of **unsuccessful answers** or periods of silence. This could also follow negations or affirmations. **Additionally,** it is possible that the teacher repeats the question implicitly, rather than a verbatim or **paraphrased** rephrasing.

- Teacher: Do you think he was mad that his foot was stuck in the honey, Deboria?
  Student 1: Yeah.
  Teacher: How come? *Why do you think he was mad?*
  Student 1: Because the honey was all over . . . mmmm . . . Duck's floor.
  Teacher: Over Bear's floor?
  Student 1: Yeah.
  Teacher: Ok, and it was all over his foot. *Why else do you think maybe he was mad, Ronnie?*

- Teacher: Why did it take so long to turn the water off?
  Student: The faucet was rusty?
  Teacher: Okay. *Anyone else?*

--CONVERSATIONAL TEACHER RESPONSE (code 11)

The teacher responds to a student-initiated response in a way that appears to be more conversational than the more prevalent question-response-feedback pattern.

- Student: Don't you think that the tribes would have been against each other?
  Teacher: *That very often happens when you have different groups of people in a country, they don't draw together to help each other when there's a problem. Very often they just say, "well, that's your problem it's not mine."*
  Student: Like even if it's people from both tribes, would they go together and help?
  Teacher: *Well, you would hope they would. But, think what happens on the playground . . .*

Appendix B

Inter-rater Agreements (2 raters)

Classification	Percent agreement
30	81.2
31	89.1
32	84.6
33	87.5
34	95.9
35	85.1
36	100.0
37	83.3
40	84.2
41	96.7
42	91.2
12	98.6
25	100.0
26	93.1
27	99.1
50	97.4
01	96.2
02	92.1
04	71.0
05	86.5
06	80.0
07	83.9
08	95.5
09	90.0
10	91.5
11	90.4